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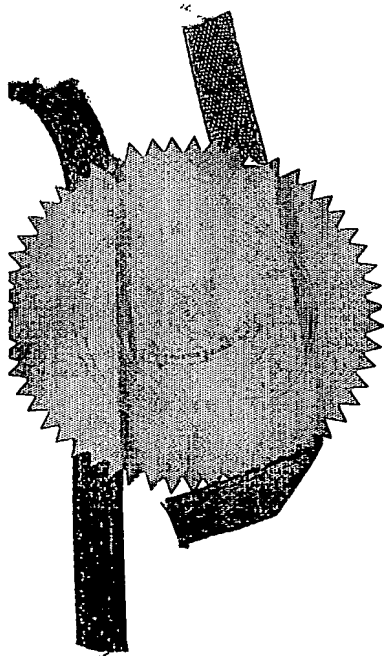
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Proprietor(s) of Patent : VERITAS MOBILE SOLUTIONS PTE LTD

Title of Invention : System And Method For Facilitating Payment
Via A Communications Network Using Value
Accredited To A Customer Of The
Communications Network



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"System and Method for Facilitating Payment via a Communications Network Using Value Accredited to a Customer of the Communications Network"

Field of the Invention

The present invention relates to a system and method for facilitating payment via a communications network using value accredited to a customer of the communications network. The invention is particularly, but not exclusively, adapted to:

- facilitate the transfer of credit from the account of a first mobile phone user to the account of a second mobile phone user using the communications network of a carrier common to both users; and
- facilitate the transfer of credit from the account of the first mobile phone user to the account of a merchant accredited by the carrier.

Background Art

The following discussion of the background of the invention is intended to facilitate an understanding of the invention. However, it should be appreciated that the discussion is not an acknowledgement or admission that any of the material referred to was published, known or part of the common general knowledge of the person skilled in the art in any jurisdiction as at the priority date of the application.

Telecommunication carriers have, in recent years, expanded to provide premium data services and value-added services, such as downloadable ringtones and logos. These services are charged to the end-user by means of the carrier's billing system.



Each carrier's billing system is, at its generic level, configured to:

- debit from a customer's account with the carrier an amount equal to the cost of a call made by the customer or premium data service or value-added service received by the customer (as determined by the applicable tariff rate defined by the carrier for the call or service); and
- add credit to a customer's account with the carrier on receipt of a payment, which may be a pre- or post-payment.

The problem with this arrangement is that third parties wanting to provide services to customers of the carrier must directly access the carrier's billing system to co-ordinate payment. This is an unlikely proposition, however, as allowing a third party direct access to a carrier's billing system raises security and implementation issues. Most notably, allowing third party access to a carrier's billing system opens the billing system up to exploitation and/or malicious use by external people who may, or may not, be associated with a third party authorised to directly access the carrier's billing system.

An additional problem with billing systems as described above, is that such billing systems are not configured to handle situations where a first customer wishes to transfer a credit amount to a second customer without need to expressly notify the carrier that such a transaction is to take place.

Accordingly, it is an object of the present invention to provide a system and method for facilitating payment via a communications network where one or both of the aforementioned problems is overcome through appropriate manipulation of the carrier's existing billing system without need of modification. This is achieved by receiving or sending a communication message with a corresponding or defined tariff and using the debited amount to credit another user or merchant account other than that of the operator. The defined tariff of the communication message may be determined by the details (ie. a number or number word) recorded in the communication message.

Disclosure of the Invention

Throughout the specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

In accordance with a first aspect of the present invention there is a system for facilitating payment via a communications network using value accredited to a customer of the communications network, the system comprising:

- a first communications device owned and/or operated by the customer;
- a recipient;
- a billing system associated with the communications network, both the customer and the recipient having at least one account recorded with the billing system; and
- a payments facilitator,

wherein, when the payments facilitator receives a communication message from the customer identifying the recipient and the amount to be paid to the recipient, the communication message being sent by means of the first communications device, the payments facilitator operates to instruct the billing system to debit the amount to be paid to the recipient from the customer's at least one account and, thereafter, operates to instruct the billing system to credit the amount to be paid to the recipient to the recipient's at least one account.

Ideally, the instruction to the billing system to debit the amount to be paid takes the form of a command representative of the customer having made a call on a line having a tariff rate closest to the amount to be paid to the recipient. In determining the tariff rate closest to the amount to be paid to the recipient, the

payments facilitator may refer to a tariff look-up table comprising details of all tariff rates presently set by an operator of the communications network.

Furthermore, the instruction to the billing system to credit the amount to be paid to the recipient takes the form of a command representative of the recipient having made a payment, whether pre- or post-payment, equal to the amount to be paid to the recipient.

In this manner, payment can be made in the form of a transfer of funds from one party to another in addition to general payments for goods and/or services provided by merchants. In the latter arrangement, the payments facilitator modifies its processing to instruct the billing system to debit the amount to be paid to the recipient from the customer's at least one account and, thereafter, operates to instruct the billing system to credit the amount to be paid to the payments facilitator's account. The payment facilitator thereafter operates to make payment to the recipient via other means, such as electronic transfer or legal tender.

The communications network can take a variety of forms, such as mobile phone networks or data communications networks like the Internet. Similarly, the communication message may take such forms as Short Message Service ("SMS") messages or e-mail messages. In the same vein, communication devices may take such forms as mobile phones or computers, amongst others. This allows the invention to be applied for use in a variety of communication networks.

In a preferable embodiment, the recipient also has a communications device. In such arrangements, the customer and recipient are able to be identified by means of the unique identifiers assigned to each communication device. Additionally, automatic caller identification, or similar mechanisms, can be used to establish the unique identifier of the customer's communications device.

Preferably, the payments facilitator parses the communication message to separately identify its operative components. The communication message may include optional components that:

- identify that the communications message is the initiator of a payment of funds from at least one of the customer's accounts;
- identify which of the customer's accounts from which the amount is to be transferred;
- identify which of the recipient's accounts to which the amount is to be transferred; and/or
- identify the method of payment to the recipient.

Ideally, the customer is given some flexibility in how they wish to describe the amount to be transferred from within the communication message. For example, the customer should be allowed to enter the amount in either numerical or textual representation.

In a highly preferred embodiment, the amount credited to the recipient is less than the amount specified in the communications module. The difference in amount specified to amount credited being representative of commissions and/or transaction costs. Further, the amount representative of commissions and/or transaction costs may vary dependent on such factors as the amount value, the recipient and/or method of payment.

The invention should also provide, in an advantageous configuration, for the tariff look-up table to be automatically updated in the event of a change in any of the tariff rates defined by the carrier.

In accordance with a second aspect of the invention there is a payments facilitator for use within a system for facilitating payment via a communications network using value accredited to a customer of the communications network, the system comprising:

- a first communications device owned and/or operated by the customer;

- a recipient; and
- a billing system associated with the communications network, both the customer and the recipient having at least one account recorded with the billing system;

wherein, when the payments facilitator receives a communication message from the customer identifying the recipient and the amount to be paid to the recipient, the communication message being sent by means of the first communications device, the payments facilitator operates to instruct the billing system to debit the amount to be paid to the recipient from the customer's at least one account and thereafter, operates to instruct the billing system to credit the amount to be paid to the recipient to the recipient's at least one account.

In an advantageous arrangement, the instruction given by the payments facilitator to the billing system to debit the amount to be paid takes the form of a command representative of the customer having made a call on a line having a tariff rate closest to the amount to be paid to the recipient. In determining the tariff rate closest to the amount to be paid to the recipient, the payments facilitator may refer to a tariff look-up table comprising details of all tariff rates presently set by an operator of the communications network. Further, the payments facilitator may be configured to automatically update the tariff look-up table in the event of a change in any of the tariff rates defined by the carrier.

Additionally, the instruction to the billing system to credit the amount to be paid to the recipient takes the form of a command representative of the recipient having made a payment, whether pre- or post-payment, equal to the amount to be paid to the recipient.

In a yet further arrangement, the payments facilitator may, upon instructing the billing system to debit the amount to be paid to the recipient from the customer's at least one account, operate to instruct the billing system to credit the amount to be paid to the payments facilitator's account. The payment facilitator thereafter operates to make payment to the recipient via other means, such as electronic

transfer or legal tender. The payments facilitator may use techniques such as automatic caller identification, or similar mechanisms, to establish the unique identifier of the customer's communications device, and thereby properly identify the customer's account with the carrier.

Preferably, the payments facilitator parses the communication message to separately identify its operative components. Further, the payments facilitator operates to adjust the amount to be credited to the recipient – the adjustment being representative of commissions and/or transaction costs to be paid to the payments facilitator.

In accordance with a third aspect of the invention there is a first communications device for use in a system for facilitating payment via a communications network using value accredited to a customer of the communications network, the first communications device being owned and/or operated by the customer and the system further comprising:

- a recipient;
- a billing system associated with the communications network, both the customer and the recipient having at least one account recorded with the billing system; and
- a payments facilitator,

wherein, the customer uses the first communications device to send a communication message identifying the recipient and the amount to be paid to the recipient to the payments facilitator, the payments facilitator thereafter operating to instruct the billing system to debit the amount to be paid to the recipient from the customer's at least one account and instruct the billing system to credit the amount to be paid to the recipient to the recipient's at least one account.

The first communications device may take a variety of forms, such as a mobile phone or computer. Further, the communication message sent by the first

communications device may take such forms as an SMS message or e-mail message.

The communication message may also include optional components such as those that:

- identify that the communications message is the initiator of a payment of funds from at least one of the customer's accounts;
- identify which of the customer's accounts from which the amount is to be transferred;
- identify which of the recipient's accounts to which the amount is to be transferred; and/or
- identify the method of payment to the recipient.

The communication message should also provide some flexibility to the customer in how they wish to describe the amount to be transferred.

In accordance with a fourth aspect of the invention there is a method for facilitating payment via a communications network using value accredited to a customer of the communications network comprising:

- receiving a communications message from the customer specifying the intended recipient and the amount they are to receive;
- comparing the amount to be paid to the entries in a tariff-rate table to determine the tariff rate that most closely approximates the amount to be paid;
- instructing a billing system of the communications network to record a charge against the value accredited to the customer, the charge representative of the customer having made a telephone call on a

line having the tariff rate most closely approximating the amount to be paid; and

- instructing the billing system to credit the recipients account with the amount by recording a transaction representative of the recipient having made a payment on their account equal to the amount to be paid.

Brief Description of the Drawings

The invention will now be described with reference to the following drawings, of which:

Figure 1 is a schematic diagram of a first embodiment of a system for facilitating payment via a communications network using value accredited to a customer of the communications network.

Figure 2 is a schematic diagram of a second embodiment of a system for facilitating payment via a communications network using value accredited to a customer of the communications network.

Best Mode(s) for Carrying Out the Invention

In accordance with a first aspect of the invention there is provided a system 10 for facilitating payment via a communications network 12 using value accredited to a first customer 14 of the communications network 12. In addition to the elements of the system 10 already identified, the system 10 further comprises:

- a billing system 18;
- a payments facilitator 20;
- a first communication device 22;
- a second customer 16; and

- a second communication device 24.

The communications network 12 and billing system 18 are owned and/or operated by a carrier 28. The first communication device 22 is owned and/or operated by the first customer 14. The second communication device 24 is owned and/or operated by the second customer 16.

The billing system 18 records a plurality of accounts 30. At least one of the plurality of accounts 30 is associated with the first customer 14. At least one of the plurality of accounts 30 is associated with the second customer 24. Ideally, the association between customer 14, 16 and account 30 is formed by the unique communication identifier assigned to the customer's 14, 16 communication device 22, 24 respectively.

The first and second communication device 22, 24 are in data communication with the payments facilitator 20 via the communications network 12. The payments facilitator 20 is also in data and control communication with billing system 18. The payments facilitator 20 further incorporates a tariff look-up table 34 that includes details of all tariff rates defined by the carrier 28.

In the embodiment shown in Figure 1, the communications network is a mobile phone network, such as a GSM network. Accordingly, first and second communication device 22, 24 are mobile phones. The unique communication identifiers assigned to the first and second communication device 22, 24 are their respective assigned mobile phone numbers. Additionally, tariff look-up table 34 includes details of all tariff rates defined by the carrier 28 for mobile terminating ("MT") charges.

The system will now be described with reference to some examples. In the first example to be described, first customer 14 is desirous of transferring credit from one of his associated accounts 30 to an associated account 30 of second customer 16.

To initiate the transfer, first customer 14 sends a communication message 32, in the form of a SMS message, to the payments facilitator 20. The communication message 32 is required to comply with the following format:

SEND <Amount> <Target Communication Device Identifier>

The <Amount> component of the communication message 32 can be either a numerical representation or a textual representation of the amount to be transferred. For example, "25" or "twenty-five" can be used to indicate that an amount of \$25 is intended to be transferred to the account associated with the target communication device identifier.

The <Target Communication Device Identifier> component of the communication message 32 is the unique communication identifier of the second communication device 24. For example, 0917 893 0986.

On receipt of the communication message 32, the payments facilitator 20 parses the communication message 32 to determine its component parts. Accordingly, upon completion of the parsing operation, the payments facilitator 20 has separately identified the <Amount> value and the <Target Communication Device Identifier>. Through automatic caller identification, the unique communication identifier of the first communication device 22 is also established.

Payments facilitator 20 then operates to convert the <Amount> value into a format that provides for comparison to the various tariff rates defined by the carrier 28 that are stored in the tariff look-up table 34. A comparison is then made between the <Amount> value and the various tariff rates to determine the closest tariff rate to the <Amount> value. A charge to the first customer's 14 account 30 with the carrier 28 (as determined through the unique communication identifier established via the automatic caller identification technique) is then made by the payments facilitator 20 by initiating a command 35 to the billing system 18 representative of the first customer 14 having made a call on a line having the tariff rate closest to the <Amount> value.

Once the first customer's 14 account 30 has been appropriately charged, the payments facilitator 20 then operates to credit the second customer's 24 account 30. This is achieved by, firstly, matching the <Target Communication Device Identifier> with the unique communication identifier of the second customer's 24 account 30. Thereafter, a command 37 is initiated to the billing system 18 representative of the second customer 24 having made a payment, whether pre- or post-payment, equal to the <Amount> value on their account 30.

In this, the second example to be described, first customer 14 is desirous of making payment for goods and/or services provided by a merchant 36. The second example is shown graphically at Figure 2.

To initiate the payment, first customer 14 sends a communication message 32, in the form of an SMS message, to the payments facilitator 20. The communication message 32 is required to comply with the following format:

SEND <Amount> <Merchant Identifier>

The <Amount> component of the communication message 32 can be either a numerical representation or a textual representation of the amount to be transferred. For example, "25" or "twenty-five" can be used to indicate that an amount of \$25 is intended to be paid to the merchant 36.

The <Merchant Identifier> component of the communication message 32 is the unique identifier of the merchant 36. For example, the <Merchant Identifier> may be the mobile phone number of the merchant 36. Alternatively, the <Merchant Identifier> may be a unique identifier assigned to the merchant 36 by the payments facilitator 20.

On receipt of the communication message 32, the payments facilitator 20 parses the communication message 32 to determine its component parts. Accordingly, upon completion of the parsing operation, the payments facilitator 20 has separately identified the <Amount> value and the <Merchant Identifier>. Through

automatic caller identification, the unique communication identifier of the first communication device 22 is also established.

Payments facilitator 20 then operates to convert the <Amount> value into a monetary value. A comparison is then made between the <Amount> value and the various tariff rates to determine the closest tariff rate to the <Amount> value. A charge to the first customer's 14 account 30 with the carrier 28 (as determined through the unique communication identifier established via the automatic caller identification technique) is then made by the payments facilitator 20 by initiating a command 35 to the billing system 18 representative of the first customer 14 having made a call on a line having the tariff rate closest to the <Amount> value.

Once the first customer's 14 account 30 has been appropriately charged, the payments facilitator 20 then operates to credit its own account 30 with the carrier 28. This is achieved by, initiating a command 37 to the billing system 18 representative of the payments facilitator 20 having made a payment equal to the <Amount> value.

The payments facilitator 20 then obtains identification details in respect of the merchant to be paid by checking a merchant look-up table 38 (<Merchant Identifier> values equating to the look-up key of the merchant look-up table 38). Payment 40 equal to <Amount> value is then made by the payments facilitator 20 to the identified merchant 36. In this manner, the merchant can be paid in legal tender or by electronic transfer rather than in credit to his/her mobile phone account.

It should be appreciated by the person skilled in the art that the invention is not limited to the embodiments described. In particular, the inventions as described can include the following modifications and/or additions:

- the invention can be modified to suit a situation where the communications network 12 is a data communications network such as the Internet. In such an arrangement it is envisaged that the first and second communication devices 22, 26 take the form of

computers and the communication message 32 takes the form of an e-mail. A number of unique identifiers can then be used to identify the communication devices, however, in static IP situations, the IP address of the computer may be used as the unique identifier.

- The communication message 32 may be adapted in a variety of ways, provided that as a minimum the amount to be paid and identification of the intended recipient are included in the message. For example, modifications to the communication message 32 may include:

- (i) adding component identifying which of a plurality of accounts 30 from which the first customer 14 wishes the payment to be made.
- (ii) adding component identifying which of a plurality of accounts 30 associated with the second customer 24 the first customer 14 wants to credit with the payment.
- (iii) adding a component identifying the method of payment to be made to the recipient. For example, electronic transfer, credit of associated account 30 held in the recipient's name with carrier 28 or by legal tender.

In the case of (i) and (ii) above, payment processing will need to be modified in a manner as would be apparent to the person skilled in the art.

- The payments facilitator 20 may be adapted to arrange for automatic update of the tariff look-up table 34 in the event of a change in any of the tariff rates defined by the carrier 28.
- The amount credited to the account 30 of the second customer 24 or the amount paid to the merchant 38, may be subject to commissions

or transaction costs as levied by payments facilitator 20 which reduce the total amount credited or paid. The remaining amount (ie. the amount of the commissions or transaction costs) being either credited to the payments facilitator 20's account 30 with carrier 28 or retained by the payments facilitator 20 (as appropriate). The amount of commission or transaction cost may vary depending on such factors as amount of payment to be made, recipient and/or method of payment.

- Other mechanisms than automatic caller identification can be used to establish the unique communication identifier of the first communication device 22.
- The second customer 24 need not own or operate a second communications device 26. In such situations, the second customer 24 needs to have some other attribute to facilitate identification.

Abstract



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System and Method for Facilitating Payment via a Communications Network Using Value Accredited to a Customer of the Communications Network

A system for facilitating payment via a communications network using value accredited to a customer of the communications network, the system comprising a first communications device owned and/or operated by the customer; a recipient; a billing system associated with the communications network, both the customer and the recipient having at least one account recorded with the billing system; and a payments facilitator, wherein, when the payments facilitator receives a communication message from the customer identifying the recipient and the amount to be paid to the recipient, the communication message being sent by means of the first communications device, the payments facilitator operates to instruct the billing system to debit the amount to be paid to the recipient from the customer's at least one account and, thereafter, operates to instruct the billing system to credit the amount to be paid to the recipient to the recipient's at least one account. Ideally, the instruction to the billing system to debit the amount to be paid takes the form of a command representative of the customer having made a call on a line having a tariff rate closest to the amount to be paid to the recipient. In determining the tariff rate closest to the amount to be paid to the recipient, the payments facilitator may refer to a tariff look-up table comprising details of all tariff rates presently set by an operator of the communications network.

Figure 1

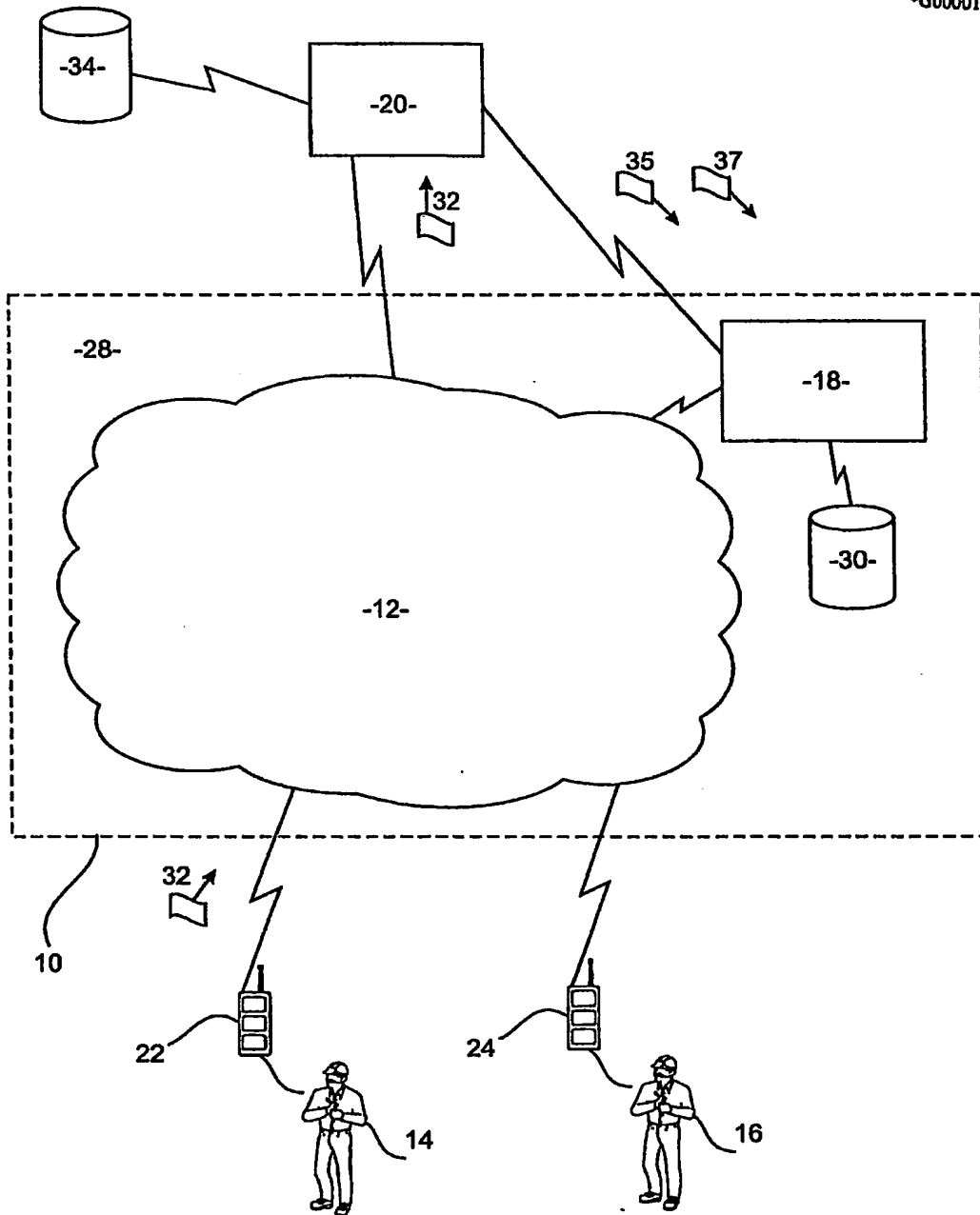


Fig. 1

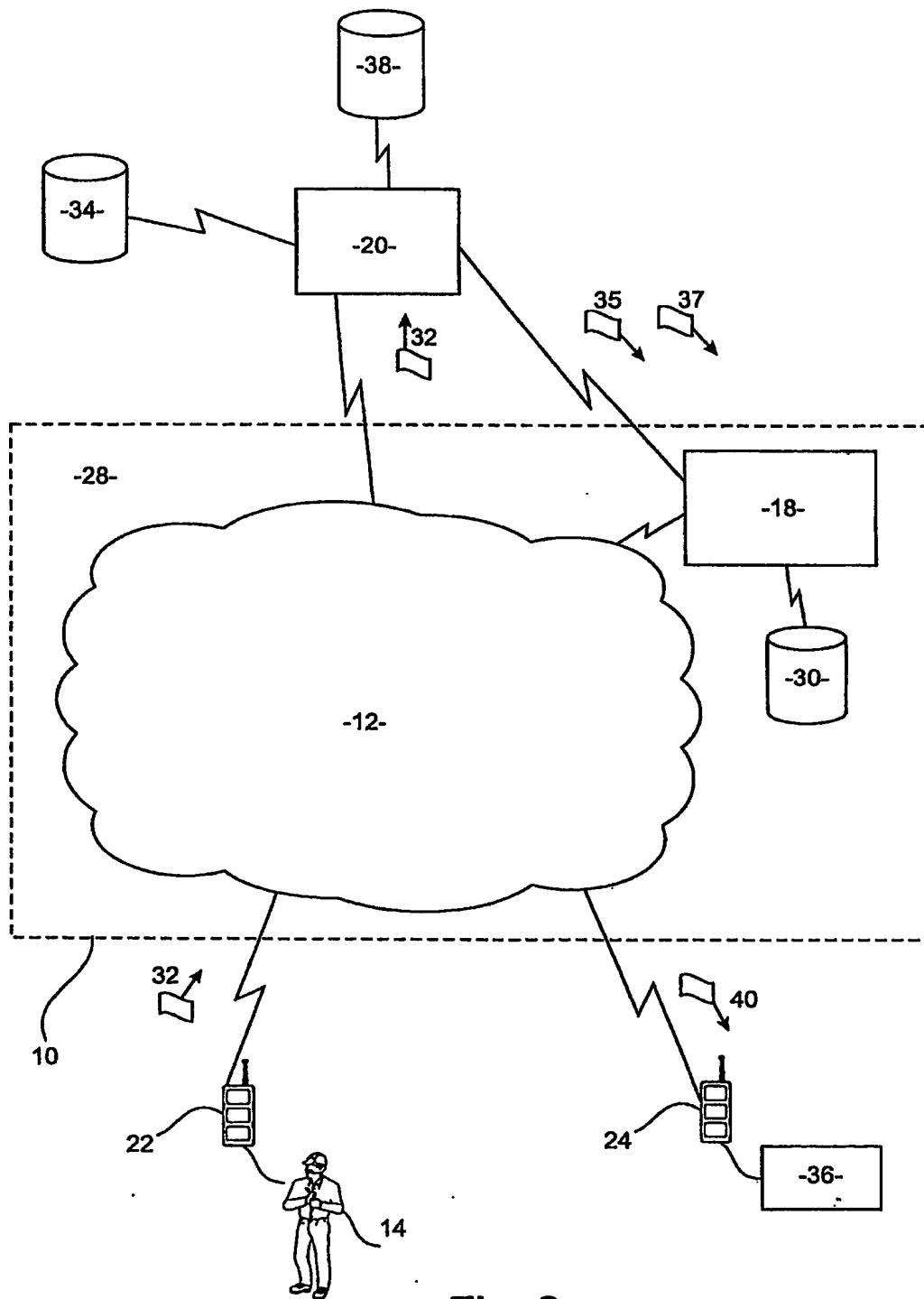


Fig. 2